

### **Remarks**

Claims 1-32, as filed, were pending in this application. In an Office Action dated April 9, 2004, the Examiner rejected claims 24-32 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,751,715 to Chan *et al.* (henceforth, Chan) in view of U.S. Patent No. 5,619,497 to Gallagher *et al.* (henceforth, Gallagher). The Examiner rejected claims 1-8, 10, 12-20 and 23 under 35 U.S.C. § 103(a) as being unpatentable over Chan in view of Gallagher and U.S. Patent No. 6,614,796 to Black *et al.* (henceforth, Black). The Examiner indicated claims 9, 11, 21 and 22 contained allowable subject matter but were objected to as depending upon a rejected base claim. Reconsideration of this application is respectfully requested in light of the amendments to claims 1, 13, 18, 24, 28 and 31; newly added claims 33-36 and the following remarks.

Claim 1, as amended, provides a method for controlling message transfer operations between nodes. A request is detected from a first node to switch the first node to a separate communication loop. The first node is switched to the separate communication loop *containing only the first node*. A request is detected from the first node to open message transfer operation between the first node and a second node. *The second node is switched to the separate communication loop when the second node is not busy.* Thus, the separate communication loop contains only the first node and the second node.

The Examiner rejected claim 1 as unpatentable over Chan in view of Gallagher and Black. The Examiner describes Chan as disclosing subloops at page 2, reproduced as follows (italics in the original):

Chan teaches the architecture of an accelerated Fibre Channel local area network (Fig. 8A) implemented using an accelerated protocol Fibre Channel hub (*Interconnect system*) having four hub ports coupled to four subloops (*private loop devices*), although any number of hub ports and subloops can be used. The function of these hub ports is to implement an accelerated Fiber Channel protocol handshaking and data exchange involves dividing a *Fibre Channel arbitrated loop* architecture up into a plurality of arbitrated subloops (*private loop devices*), each of which arbitrates locally using the same fundamentals as the Fiber Channel arbitration protocol but with some slight modifications which do not affect the compatibility of standard Fiber Channel nodes.

As pointed out by the Examiner, Chan starts with an interconnected set of subloops, each of which connects a plurality of nodes. Chan then switches out subloops that do not include either the source node or the destination node. The resulting loop includes many nodes which are neither the source node or the destination node.

Claim 1 provides for initiating a separate loop containing only the requesting first node and then adding the requesting second node to the separate loop. Thus, the separate loop contains only the requesting node and the responding node. Chan neither teaches nor suggests forming a separate loop containing only those nodes necessary to support the requested communication. In addition, neither Gallagher or Black appear to disclose the elements of claim 1. Claim 1 is patentable over any combination of Chan, Gallagher or Black. Claims 2-12 depend from claim 1 and are therefore also patentable over Chan.

Independent claim 13, as amended, provides a switching hub for use in a network having a plurality of nodes each connected to the switching hub by a sending channel and a receiving channel. The hub includes an interconnect switch, port interfaces and a controller. The controller controls the interconnect switch to form separate communication loops based on detected messages. Each separate communication loop includes only at least one requesting node and at least one node responding to the at least one requesting node.

Chan discloses forming a loop from subloops, the resulting loop including whatever nodes were part of the original subloops. This is different from including only requesting and responding nodes as provided in claim 13. In addition, neither Gallagher or Black appear to disclose the elements of claim 13. Claim 13 is patentable over any combination of Chan, Gallagher or Black. Claims 14-23 depend from claim 13 and are therefore also patentable.

Independent claim 24, as amended, provides a hub interconnecting a plurality of nodes. Each node has a channel over which data is transmitted and received. The hub includes a port interface, an interconnect device and a controller. The controller can signal the interconnect device to form a plurality of separate communication loops. Each separate communication loop includes only requesting nodes and nodes responding to the requesting nodes.

Chan does not disclose forming subloops with each node in any formed subloop either requesting or responding to requests. In addition, neither Gallagher or Black appear to

disclose the elements of claim 24. Claim 24 is patentable over any combination of Chan, Gallagher or Black. Claims 25-27 depend from claim 24 and are therefore also patentable.

Independent claim 28, as amended, provides a method of interconnecting a plurality of nodes. A main communication loop interconnecting the plurality of nodes is formed. A request is received from a first node to access a second node. If the second node is not busy, a separate communication loop is formed including only the first node and the second node. The separate communication loop is formed to leave the nodes not including the first node and the second node interconnected by the main communication loop.

Chan does not disclose forming a separate loop containing a first, requesting node and a second, requested node. In addition, neither Gallagher or Black appear to disclose the elements of claim 28. Claim 28 is patentable over any combination of Chan, Gallagher or Black. Claims 29-32 depend from claim 28 and are therefore also patentable.

Claims 9, 11, 21 and 22 were indicated as containing allowable subject matter. Newly added claims 33-36 contain the subject matter of claims 9, 11, 21 and 22, respectively, as well as elements from base and intermediate claims as appropriate. These claims are therefore patentable over the cited art.

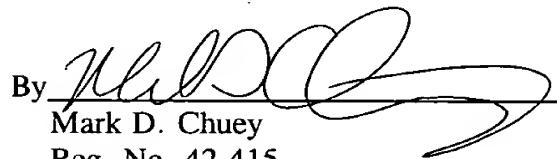
Claims 1-36, as amended, are pending in this application. This case is in appropriate condition for allowance and the Examiner is respectfully requested to pass this case to issuance. A check for \$416 to cover four additional independent claims is included. No additional fee is believed due. However, any additional fee due may be withdrawn from, or any excess fee paid to, Deposit Account No. 19-4545 as specified in the Application Transmittal.

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The Examiner is invited to contact the undersigned regarding any aspect of this case.

Respectfully submitted,  
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